EPIDEMIOLOGY RESOURCES, INC.

1203 Shattuck Ave
Berkeley CA 94709
December 8, 1981
415-526-0141

410024

Dr. W. J. Bair
Batelle Pacific Northwest Laboratories
PO Box 999
Richland, WA 99352

Dear Dr. Bair:

Thank you for your letter of Dec. 2, regarding dose and risk figures given in "Melelen Radiation Ilo Ailin In Bikini" (MIB).

I have been in touch with the Robison group and have received a great deal of information on the calculation of dosage. In fact, I have just returned from Bikini where they are on one of their periodic visits. Dr. Robison has been kind enough to let me see the current draft of his final report dealing with the atoll.

Our job is to review the calculations of dose and risk for the Bikini people (and of course to report our findings to DOE). Since the booklet (MIB) written by you and Drs Healy and Wachholz summarized the position for the Bikini people, it is very important that we understand how you arrived at the statements made in it. In asking for clarification, I am not arguing in any way about what you have done; I am only trying to learn precisely what was done.

As I read the draft report (Robison's) and compare it to MIB, it seems to me that some clarification is needed because the two are not identical. In saying this, I do not mean to imply that the two documents contradict one another. By way of specifying what I need to know, let me ask you a number of questions, based on page 22, column 2.

1) The first entry of 6200 mrem is the largest amount of radiation a person might receive in one year. (a) I don't see where that figure occurs in the Robison draft. Did you make some assumption about dose distribution and then calculate this maximum? (b) In the Robison draft, Table 23 gives a maximum annual dose of about 2000 mrem, but the meaning of maximum here relates to the maximum year rather than the "maximum person" in a given year.

2) The 30-year cumulative dose of about 45000 mrem is in agreement with Robison's Table 27.

3) Robison has not calculated any risks. You state on page 20 that you have(?) calculated risks from the studies of what I take to be BEIR, November 1972. What factors and conditions did you use?

a) You assume a population of 550 for a period of 30 years and project 24 cancer deaths over that period, I suppose on the basis of an annual death rate of about 0.9% and 16% of that being due to cancer. Were the rates based on Marshallese statistics? If so, I would like to know how I could gain access to them.

(over, please)

b) The third entry in the column projects 4-22 extra cancer deaths during the course of 30 years. I would like to know how that calculation was made.

c) The fourth entry projects a usual rate of 140 birth defects (congenital), presumably in a total of 1400 live births over 30 years. Is that based on Marshall Island experience? Applying BEIR factors (?), radiation exposure would increase this total by 12. What factor was used?

All of this, I believe, is rather simple and direct;and. the information will help us a great deal. If my questions are not clear enough, perhaps you might find it convenient to telephone me. Obviously the calculation of risk lies at the very heart of the decision-making process.

We shall very much appreciate your help.

Sincerely yours,

Henry I. Kohn

DOCUMENT **DOES NOT** CONTAIN ECI

Reviewed by [redacted] Date 4/30/97

REPOSITORY PNNL

COLLECTION Marshall Islands

BOX No. 5684

FOLDER Bikini - [redacted] 1981